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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,559	02/25/2002	Terrence M. Shannon	10980892-1	8935

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EXAMINER	
PAPANIKOLAOU, ATHANASIOS T	
ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,559	SHANNON, TERRENCE M.	
	Examiner	Art Unit	
	Athanasios Tom Papanikolaou	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being unpatentable over Fall et al. (U.S. Patent 5,991,515).

Claims 1 through 5 recite features of a processor readable medium. The claims are rejected based on anticipation by Fall et al., which discloses similar features with an apparatus and method, but not a processor readable medium. However, without a processor readable medium to store a program that makes it possible for the apparatus and methods to execute, the relevant teachings of Fall could not function. Therefore, the rejections derived from Fall are applicable to claims 1 through 5.

Regarding claim 1, Fall discloses **comparing a rate of pattern repetition in data to recorded rates of pattern repetition** (see Fig 4(e), image data is partitioned into blocks of data referred to as objects within regions; see Fig. 5, new objects are compared to existing objects of the same type and stored in a collector if unique); **determining a content type using the rate of pattern repetition and the recorded**

rates of pattern repetition (see Fig. 8b); **and compressing and decompressing data in a manner appropriate to the content type** (column 3, lines 15 through 20).

Regarding claim 2, Fall discloses **the limitations of claim 1** stated above and further teaches **determining data patterns that are frequently found in a first content type and which are infrequently found in a second content type (Fig 8, element 196, regions with the same criteria or patterns are combined).**

Regarding claim 3, Fall discloses **the limitations of claim 1** stated above and further teaches **examining data of a known content type** (see Fig. 8, *known data type is examined* and assigned a compression scheme); **recording rates of pattern repetition found in the data of the known content type** (column 9, lines 13 through 28, the use of LZW encoding inherently includes the process of recording patterns of image data in a table).

Regarding claim 4, Fall discloses **the limitations of claim 1** stated above and further teaches **after the rate of pattern repetition changes, compressing and decompressing data according to a new content type** (see Fig. 3).

Regarding claim 5, Fall discloses **the limitations of claim 1** stated above and further teaches **building a pattern library by recording rates of pattern repetition**

from data of a known content type (column 9, lines 13 through 28, the use of LZW encoding inherently includes the process of recording patterns of image data in a table).

Regarding claim 6, Fall discloses **a system for data content recognition, compression, and decompression, comprising: a data recognition module to recognize a content type of data; a compressor to compress the data according to the content type; and a decompressor to decompress the data according to the content type** (column 3, lines 15 through 20).

Regarding claim 7, Fall discloses **the limitations of claim 6** stated above and further teaches **wherein the data comprises device ready bits appropriate to drive a print engine** (column 8, lines 27 through 29).

Regarding claim 8, Fall discloses **the limitations of claim 7** stated above and further teaches **a buffer, within which the device ready bits reside after compression and before decompression** (see Fig.2, element 24, buffers are well know in the art of image processing and can be added between components as needed).

Regarding claim 9, Fall discloses **the limitations of claim 6** stated above and further teaches **wherein the compressor is on a workstation and the decompressor is on a printer** (column 8, lines 34 through 38).

Regarding claim 10, Fall discloses **the limitations of claim 6** stated above and further teaches **wherein the compressor and the decompressor are on a printer** (see Fig. 2, Fig. 2(b), and column 7, lines 32 through 34).

Regarding claim 11, Fall discloses **the limitations of claim 6** stated above and further teaches **a PDL interpreter to supply the data to the data recognition module** (column 7, lines 50 through 53).

Regarding claim 12, Fall discloses **the limitations of claim 6** stated above and further teaches **a print engine to receive the data after decompression** (column 8, lines 24 through 29).

Regarding claim 13, Fall discloses **the limitations of claim 6** stated above and further teaches **a learning module, in communication with the data recognition module, to learn relationships between a plurality of data patterns associated with a plurality of content types** (column 9, lines 13 through 28, the use of LZW encoding inherently includes building a table of learned patterns within different content types which could be implemented as a learning module intercommunicating with other modules, including a data recogniton module, within the digital processor of Fig. 2, element 26).

Regarding claim 14, Fall discloses **the limitations of claim 6** stated above and further teaches **a pattern library, in communication with the data recognition module, to store information on relationships between data patterns and content types** (column 9, lines 13 through 28, the use of LZW encoding inherently includes storing relationships of previously detected patterns of different content types in a dictionary, which could be implemented as a module intercommunicating with other modules, including a data recogniton module, within the digital processor of Fig. 2, element 26).

Regarding claim 15, Fall discloses **the limitations of claim 6** stated above and further teaches **a recognition module, in communication with the data recognition module, to associate data patterns and content types** (column 9, lines 13 through 28, the use of LZW encoding inherently includes a dictionary which combines data patterns of different content types which could be implemented as a module intercommunicating with other modules, including a data recogniton module, within the digital processor of Fig. 2, element 26).

Regarding claim 16, Fall discloses **a printer** (column 7, lines 50 through 59), **comprising: a data recognition module to recognize a content type of device ready bits; a compressor to compress the device ready bits according to the content type of the device ready bits** (column 3, lines 15 through 20); **a buffer to store the device ready bits after compression and before decompression** (see

Fig.2, element 24, buffers are well know in the art of image processing and can be added between components as needed); **a decompressor to decompress the device ready bits according to compression of the device ready bits**(column 3, lines 15 through 20); **and a print engine to receive the device ready bits after decompression**(column 8, lines 24 through 29).

Regarding claim 17, Fall discloses **the limitations of claim 16** stated above and further teaches **a PDL interpreter to interpret a PDL print job and to supply the device ready bits** (column 7, lines 50 through 53).

Regarding claim 18, Fall discloses **the limitations of claim 16** stated above and further teaches **wherein the data recognition module additionally comprises: a learning module to learn relationships between a plurality of data patterns and a plurality of content types** (column 9, lines 13 through 28, the use of LZW encoding inherently includes building a table of learned patterns within different content types which could be implemented as a learning module within a recognition module within the digital processor of Fig. 2, element 26).

Regarding claim 19, Fall discloses **the limitations of claim 18** stated above and further teaches **wherein the data recognition module additionally comprises: a pattern library to store information on the relationships** (column 9, lines 13 through 28, the use of LZW encoding inherently includes storing relationships of previously seen

patterns of different content types in a dictionary, which could be implemented within a data recogniton module within the digital processor of Fig. 2, element 26).

Regarding claim 20, Fall discloses **the limitations of claim 16** stated above and further teaches **wherein the data recognition module additionally comprises: a recognition module to associate data patterns and content types** (column 9, lines 13 through 28, the use of LZW encoding inherently includes a dictionary which combines data patterns of different content types which could be implemented as a module within the digital processor of Fig. 2, element 26).

3. Claims 21 through 26 recite identical features as claims 1, 6, 7, 3, 19, 4, and 1 respectively, except claims 1, 6, 7, 3, 19, 4, and 1 are processor-readable medium, system, or apparatus claims. Thus arguments similar to that presented above for claims 1, 6, 7, 3, 19, 4, and 1 are equally applicable to claims 21-26.

4. Claims 27 through 32 recite identical features as claims 1, 1, 23, 3, 19, and 26, respectively, except claims 27-32 are computer readable medium claims. Thus, arguments similar to that presented above for claims 1, 1, 23, 3, 19, and 26 are equally applicable to claims 27-32 because without a computer readable medium to store a program that makes it possible for the apparatus to operate, the apparatus taught by Fall, the rejections for claims 1, 1, 23, 3, 19, and 26 could not function.

Citation of Pertinent Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bialkowski (U.S. Patent Application Publication 2003/0018647) discloses a system and method for data compression using a hybrid-coding scheme, which includes a dictionary, a statistical model, and encoder.

Whitehead (U.S. Patent 6,898,311) discloses analyzing patterns in image bit streams, assigning an indication of the bit pattern, and compression/decompression thereafter.

Trachtman (U.S. Patent Application Publication 2002/0037107) discloses segmenting an image into text and non-text areas and compression/decompression thereafter.

Ott (U.S. Patent 6400728) discloses determining the data type of data using a detecting module.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Athanasios Tom Papanikolaou whose telephone number is (571)272-7953. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.P.

JOSEPH R. POKRZYWA
PRIMARY EXAMINER
ART UNIT 2622

Joseph R Pokrzywa